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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/943, 144	10/03/97	KOSHIBA	T 21850208P-SP

HM12/0804  
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<input type="checkbox"/> EXAMINER	
ZAGHMOUT, O	

<input type="checkbox"/> ART UNIT	<input type="checkbox"/> PAPER NUMBER
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1649

**DATE MAILED:** 08/04/99

**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

## Office Action Summary

Application No. 08/943,144	Applicant(s) Koshiba et al.
Examiner Ousama Zaghoum	Group Art Unit 1649

Responsive to communication(s) filed on 9-17-1998, 5-10-1999

This action is **FINAL**.

Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

### Disposition of Claims

Claim(s) 18-30 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

Claim(s) \_\_\_\_\_ is/are allowed.

Claim(s) 18-19 and 22-30 is/are rejected.

Claim(s) 20-21 is/are objected to.

Claims \_\_\_\_\_ are subject to restriction or election requirement.

### Application Papers

See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

The proposed drawing correction, filed on \_\_\_\_\_ is  approved  disapproved.

The specification is objected to by the Examiner.

The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

All  Some\*  None of the CERTIFIED copies of the priority documents have been  received.

received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

### Attachment(s)

Notice of References Cited, PTO-892

Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

Interview Summary, PTO-413

Notice of Draftsperson's Patent Drawing Review, PTO-948

Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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**DETAILED OFFICE ACTION**

The request filed on 5-10-1999 for a Continued Prosecution Application (CPA) under 37 CFR 1.53(d) based on parent Application No. 08/943,144 is acceptable and a CPA has been established. An action on the CPA follows.

Claims 2-7 have been canceled [Paper No. 9]

Claims 1, 18-17 have been canceled [Paper No. 12].

Claims 18-30 have been newly added [Paper No. 12].

Claims 18-30 are pending.

The Examiner would like to draw the Applicants' attention to a number of typographical errors in specification (e.g., epycotyl in line 4, page 28) and in the claims ( e.g., gener in claim 21, line 1). As such, correction of these errors and others is respectfully requested.

**Response to Amendment**

Applicants amendments and remarks have been received and entered [Paper Nos: 9 and 12]. Applicants arguments regarding the rejection of claims 1-7 under USC 101, claims 1-3 and 8-16 under 112 first paragraph, claims 6-9 under 112 first paragraph, claims 1-16 under 35 USC 103 (a) have been found persuasive. Therefore, the rejections of these claims are withdrawn. However, new grounds of rejections were made in this Office Action which directly relate to the scope of element (e) in claim 18.

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**Claim Rejections - 35 U.S.C. § 112**

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

**Ist. Paragraph**

*18-19, 22-30 are*  
Claim <sup>5</sup> rejected under 35 U.S.C. 112, first paragraph, as the specification does not contain a written description of the claimed invention, in that the disclosure does not reasonably convey to one skilled in the relevant art that the inventor(s) had possession of the claimed invention at the time the application was filed.

The claim is broadly drawn to an isolated aldehyde oxidase gene having a nucleotide sequence which encodes an amino acid sequence of a 4.4 Kbp gene obtainable from a plant using a combination of PCR primers that are selected from a group consisting of SEQ ID: 7-15. However, Applicants have disclosed only the sequences shown in SEQ ID: 1-4 which were isolated from corn. Applicants have not shown other sequences which were isolated by PCR reactions using said primers from other plant species. Applicants have not disclosed the conditions for the PCR reactions. Subsequently, if those PCR primers were used in a PCR reaction under condition that are not stringent enough for the denaturation, annealing and extension steps, other products would have been produced. The question is then whether said

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product would contain the 4.4 Kbp or a combination of large number of other genes. Therefore, since Applicants have not disclosed said sequences and have not specified the conditions under which the PCR reactions were carried out, one of skill in the art would not have recognized the Applicants to have been in possession of the claimed nucleotide sequences. Accordingly, Applicants have failed to meet the requirements of written description.

*and 22-30*  
Claims 18-19 are rejected under 35 U.S.C. 112, first paragraph, because the specification while being enabled for isolation of sequences shown in SEQ ID NO:1-4, does not reasonably provide enablement for the isolation of an aldehyde oxidase gene having a nucleotide sequence which encodes an amino acid sequence of a 4.4 Kbp gene obtainable from a plant using a combination of PCR primers that are selected from a group consisting of SEQ ID: 7-15 or for a process of controlling production of an aldehyde oxidase in transformed host cells which express nucleotide sequences isolated using said primers. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

The breadth of the claims are not commensurate in scope with the enabling support provided. Applicants broadly claim an isolated aldehyde oxidase gene having a nucleotide sequence which encodes an amino acid sequence of a 4.4 Kbp gene obtainable from a plant

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using a combination of PCR primers that are selected from a group consisting of SEQ ID: 7-15. However, Applicants have disclosed only the sequences shown in SEQ ID: 1-4 which were isolated from corn. Applicants have not disclosed sequences from other plant species which were isolated by a PCR reaction using said primers. Applicants have not disclosed the conditions for the PCR reactions. Subsequently, if those PCR primers were used in a PCR reaction under conditions that are not stringent enough for the denaturation, annealing and extension steps, other products would have been produced. The question is then whether said products would contain the 4.4 Kbp or a combination of large number of other genes. Then a person with skill in the art would not be able to tell which fragment does contain the gene which encodes aldehyde oxidase. Applicants have not taught a person with skill in the art how to identify these fragments other than by the size of 4.4 kbp and the PCR primers. As mentioned above, large number of other fragments which encode enzymes other than aldehyde oxidase would also be produced. Another question would be is whether the plasmids, transformed cells do contain the gene which encodes aldehyde oxidase if transformed with an expression vector which contains DNA from the PCR reaction. Likewise, the process for controlling production of an aldehyde oxidase will not be enabled as the expression vector used in the transformation does not contain the gene which encodes aldehyde oxidase.

Applicants provide insufficient guidance as how to isolate, prepare, identify such materials other than a general indication to go look for it. In addition, claiming a genus of nucleic acid sequences may be achieved by means of a recitation of a representative number

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of DNA molecules, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features constitute a substantial portion of the genus.

Taken together, the instant disclosure lacks the proper and sufficient guidance to enable the claims as set forth. Thus it is not readily predictable that the genetic modification specifically disclosed will work with other will work with other plant species. Applicants have provided no specific guidance as to how to select the gene which encodes aldehyde oxidase from the PCR reaction that will give the desired fragments. One wishing to practice the invention is left to proceed through trial-and-error to see what will work and what will not. In view of the breadth of the claims, unpredictability of the art, lack of guidance in the specification of the results as stated above, it is the examiner's position that one skilled in the art to which it pertains, or with which it is most nearly connected, could not practice the invention commensurate in scope with these claims without undue experimentations.

### Conclusion

No claims are allowed.

*claims 20-21 are objected to.*

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**Future Correspondence**

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Ousama M-Faiz Zaghmout whose telephone number is (703) 308-3724. The Examiner can normally be reached Monday through Friday from 7:30 am to 5:00 pm (EST).

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, L. Smith can be reached on (703) 308, 3909. The fax phone number for the group is (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application should be directed to THE MATRIX CUSTOMER SERVICE CENTER whose telephone number is (703) 308-0196.

Ousama M-Faiz Zaghmout Ph.D.  
July 30, 1999

DAVID T. FOX  
PRIMARY EXAMINER  
GROUP 1649

*David T. Fox*